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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,109	03/06/2002	John M. Twomey	ITL.0714US	7915
21906	7590	08/09/2006	EXAMINER	
TROP PRUNER & HU, PC 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631			PATEL, JAY P	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	10/092,109		TWOMEY ET AL.	
	Examiner		Art Unit	
	Jay P. Patel		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-16, 18-25 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 17, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed 2/23/2006.
2. This action has been made final.
3. Claims 1-3, 6-16, 18-25 and 28-30 have been rejected.
4. Claims 4-5, 17 and 26-27 have been objected to.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 7, 14-16, 18-19, 21-25 and 29-30 are rejected under 35 U.S.C.

102(e) as being anticipated by Cantwell et al. (US Patent 6493346 B1).

7. In regards to claim 1, link 30 in figure 1 carries unchannelized frame relay TDM traffic (obtaining a pre-formatted time division multiplexed frame) (see figure 1 and column, lines 57-59).

The output of frame relay circuit 24 in figure 1 represents DS3 ATM data transmitted over link 34 to an ATM relay switch 36 (filling the frame with voice data formatted as asynchronous transfer mode adaptation layer packets) (see column 2, lines 63-65). The ATM relay switch 36 transmits ATM data over link 38 to a frame relay network such as a DS1 trunk (see column 2, lines 64-66).

In regards to claim 2, the frame relay circuit 24 in figure 1 anticipates obtaining a pre-formatted frame for a database of frames.

In regards to claim 3, frame relay access devices 28 in figure 1 anticipate receiving voice data from a time division multiplex stream. The TDM matrix 26 in figure 1 anticipates processing the data in a time division multiplex processor. The TDM matrix 26 is connected to the frame relay access devices 28 and communicates with these devices over T1 or E1 links 30 (see column 2, lines 49-52).

In regards to claims 7 and 14, filling the frame with voice data from an asynchronous transfer mode adaptation layer packet, is anticipated by ATM relay switch 36 in figure 1. The ATM relay switch also anticipates an ATM processor. The ATM relay switch 36 transmits ATM data over link 38 to a frame relay network such as a DS1 trunk (see column 2, lines 64-66).

8. In regards to claim 15, The TDM matrix 26 and the frame relay circuit 24 in figure 1 anticipate a processor.

A TDM frame database, to store pre-formatted frames is anticipated by the frame the frame relay access devices 28. The frame relay access device 28 is interconnected to a local area network, or host link 32 and converts Internet protocol, and system network architecture data to and from frame relay data. The conversion is inclusive of adding data link connection identifiers address; frame check sequence and other frame overhead (see column 2, lines 53-58).

The TDM matrix 26 also anticipates the processor-accessing frame from said frame database to fill the frames with voice data. The TDM matrix 26 is connected to

the frame relay access devices 28 and communicates with these devices over T1 or E1 links 30 (see column 2, lines 49-52).

In regards to claim 16, the TDM matrix 26 anticipates the TDM processor. Furthermore, the FRAD 28 is connected to the host over link 32 and FRAD 28 converts data to frame relay data (see column 2, lines 52-55). The FRAD 28 is connected to TDM matrix 26 via link 30. Therefore, the processor accessing the frame form the pre-formatted frame database to fill the frames with voce data from time division multiplex channels is anticipated by FRAD 28 being connected to the TDM matrix 26.

In regards to claim 18, the frame relay engine 98 within the frame relay circuit 24 (see figure 4) anticipates the processor reading data from each active channel and writing data into frames. The frame relay engine 98 converts PDUs to frame relay packets (see column 4, lines 18-23).

In regards to claim 19, the frame relay engine 98 performs conversions and writes converted data via PCI bus 96 to SAR (necessary for ATM switch) block 92 (see column 4, lines 18-23). Therefore, the frame relay engine and the conversion to SAR block 92 anticipates data in frame being divided into units which correspond to asynchronous transfer mode packets.

In regards to claim 21 and 22, filling the frame with voice data from an asynchronous transfer mode adaptation layer packet, is anticipated by ATM relay switch 36 in figure 1. The ATM relay switch also anticipates an ATM processor. The ATM relay switch 36 transmits ATM data over link 38 to a frame relay network such as a DS1 trunk (see column 2, lines 64-66).

In regards to claim 23, the frame relay circuit 24 and the TDM matrix 26 in figure 1 are coupled to the ATM switch 36 via link 34. Therefore the link 34 anticipates the coupling of the TDM processor with the ATM processor.

9. In regards to claim 24, link 30 carries unchannelized frame relay TDM traffic (an article to obtain a pre-formatted time division multiplexed frame) (see figure 1 and column, lines 57-59).

The output of frame relay circuit 24 in figure 1 represents DS3 ATM data transmitted over link 34 to an ATM relay switch 36 (an article to fill the frame with voice data formatted as asynchronous transfer mode adaptation layer packets) (see column 2, lines 63-65). The ATM relay switch 36 transmits ATM data over link 38 to a frame relay network such as a DS1 trunk (see column 2, lines 64-66).

In regards to claim 25, frame relay access devices 28 in figure 1 anticipate receiving voice data from a time division multiplex stream. The TDM matrix 26 in figure 1 anticipates processing the data in a time division multiplex processor. The TDM matrix 26 is connected to the frame relay access devices 28 and communicates with these devices over T1 or E1 links 30 (see column 2, lines 49-52).

Furthermore, the frame relay engine 98 within the frame relay circuit 24 (see figure 4) anticipates reading data from each active channel and writing data into frames. The frame relay engine 98 converts PDUs to frame relay packets (see column 4, lines 18-23).

In regards to claim 29, storing instructions that enable the device to receive data from an ATM cell stream, reading data from said cells and to place said data in a pre-formatted frame is anticipated by ATM relay switch 36 in figure 1. The ATM relay switch also anticipates an ATM processor. The ATM relay switch 36 transmits ATM data over link 38 to a frame relay network such as a DS1 trunk (see column 2, lines 64-66).

In regards to claim 30, providing the frame to a TDM processor is anticipated by link 34 which connects the ATM relay switch 36 to the frame relay circuit 24 and the TDM matrix 26

The TDM matrix 26 also anticipates injecting voice data into a TDM stream. The TDM matrix 26 is connected to the frame relay access devices 28 and communicates with these devices over T1 or E1 links 30 (see column 2, lines 49-52).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 6 and 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1) in view of Hosein (US Patent 6735191 B1).

12. In regards to claim 6, Cantwell teaches all the limitations of parent claims 1 and 3 as stated above. Cantwell fails to particularly teach filling the frame with a plurality of units of voice data, from said time division multiplex system. Hosein teaches the above-

mentioned limitation. Figure 1 in Hosein shows a plurality of TDM units 100 that combine multiple voice traffic channels such as 24 DSO channels into a single T1 circuit (see column 3, lines 56-58).

Therefore it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell with using the TDM units used to frame data as disclosed by Hosein. The motivation to combine would be to use multiple TDM units to combine various voice channels and frame the data for transport.

In regards to claim 8, Cantwell teaches all the limitations of parent claims 1 and 7 as stated above. Cantwell fails to particularly teach storing the packet in a unit and providing a plurality of units in a frame. Hosein teaches the above-mentioned limitations. Figure 1 in Hosein shows a plurality of TDM units 100 that combine multiple voice traffic channels such as 24 DSO channels into a single T1 circuit (see column 3, lines 56-58). Furthermore, a number of T1 circuits are combined at an AAL2 multiplexer 200 to create a virtual circuit 210 (see column 3, lines 63-66).

Therefore it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell with using the TDM units used to frame data as disclosed by Hosein. The motivation to combine would be to use multiple TDM units to combine various voice channels and frame the data for transport.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1) and Hosein (US Patent 6735191 B1) in view of Parruck et al. (US Patent 6751214 B1).

In regards to claim 9, Cantwell and Hosein teach the limitations of parent claims 1, 7 and 8. Neither Cantwell nor Hosein teach determining whether the frame is full. Parruck teaches the above-mentioned limitation. In regards to figure 2, Parruck teaches that if the frame is full, a packet may be broken up to transported in different frames (see column 2, lines 6-8).

Therefore, it would have been obvious to one skilled in the art at the time the inventions was made to combine the ATM to TDM conversion disclosed by Cantwell and using TDM units used to frame data as disclosed by Hosein with the determination of the frame being full as disclosed by Parruck. The motivation to combine would that if it is determined that a frame is full, any subsequent data within the frame can be broken up and another frame can be added.

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1), Hosein (US Patent 6735191 B1), Parruck et al. (US Patent 6751214 B1) in view of Hosein (US Patent 6728272 B1) (herein referred to as Hosein B).

In regards to claim 10, Cantwell, Hosein and Parruck fail to teach determining whether a timer has expired. Hosein B teaches the above-mentioned limitation. In figure 1, communication devices 100 and 150 communicate using the HDLC protocol.

Using a T1 frame, if no data is present for 125 microseconds, the corresponding T1 frame will contain 24 frame delimiters (see column 4, lines 39-48). The 125 microseconds period reads on determining whether a timer has expired during the filling of the frame.

Therefore it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell , using TDM units used to frame data as disclosed by Hosein, the determination of the frame being full as disclosed by Parruck with the 125 microsecond timer window disclosed by Hosein B. The motivation to combine would be to implement a timing window upon whose expiration the system can use another frame to fill subsequent data.

15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1), Hosein (US Patent 6735191 B1), Parruck et al. (US Patent 6751214 B1), Hosein (US Patent 6728272 B1) (herein referred to as Hosein B) in view of Stacey et al. (US Patent 7020141 B1).

In regards to claim 11, Cantwell, Hosein, Parruck and Hosein B fail to teach whether data has been received with a connection ID that matches the connection ID of the data already stored. Stacey teaches that a VCC identifier can be used to look up ATM cell layer port queue identifier (see column 7, lines 33-37). Therefore, determining whether data has been received with a connection ID that matches the connection ID of

data already stored reads on mapping to the VCC identifier with an ATM cell layer port queue identifier.

Therefore it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell, using TDM units used to frame data as disclosed by Hosein, the determination of the frame being full as disclosed by Parruck, the 125 microsecond timer window disclosed by Hosein B with the mapping of the VCC connection ID with the ATM cell layer port queue ID. The motivation to combine would to identify and match the connection with a proper space allocated to the connection in memory.

16. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1), Hosein (US Patent 6735191 B1), Parruck et al. (US Patent 6751214 B1), Hosein (US Patent 6728272 B1) (herein referred to as Hosein B), Stacey et al. (US Patent 7020141 B1) in view Dove et al. (7006497 B2).

In regards to claim 12, Cantwell, Hosein, Parruck, Hosein B and Stacey fail to teach a connection ID identifying a TDM channel. In figure 3C Dove shows a VCI field 32. The VCI field for TDM packets, acts as a connection identifier (see column 7, lines 37-46). Therefore, the VCI 32 reads on using the connection ID in each unit to identify a time division multiplex channel of a voice call.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell, using TDM units used to frame data as disclosed by Hosein, the determination of the

frame being full as disclosed by Parruck, the 125 microsecond timer window disclosed by Hosein B with the mapping of the VCC connection ID with the ATM cell layer port queue ID. The motivation to combine would to identify and match the connection with a proper space allocated to the connection in memory.

17. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1), Hosein (US Patent 6735191 B1), Parruck et al. (US Patent 6751214 B1), Hosein (US Patent 6728272 B1) (herein referred to as Hosein B), Stacey et al. (US Patent 7020141 B1), Dove et al. (7006497 B2) in view of Dove et al. (US Patent 7050428 B1) (herein referred to as Dove B).

In regards to claim 13, Cantwell, Hosein, Parruck, Hosein B, Stacey and Dove fail to teach setting a pointer for a TDM channel to the address of a payload in a unit. Dove B teaches that a source pointer is provided within the TSI 64 in figure 7 to address the memory for the time slots for writing operations to a stack plane. Therefore, the source pointer within the TSI 64, reads on a pointer for a TDM channel to the address of a payload in a unit.

Therefore it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell, using TDM units used to frame data as disclosed by Hosein, the determination of the frame being full as disclosed by Parruck, the 125 microsecond timer window disclosed by Hosein B with the mapping of the VCC connection ID, the ATM cell layer port queue ID with the source pointer provided by Dove B. The motivation to combine would be to

provide a more efficient way to address data within a memory without actually using up any space within the memory for addressing.

18. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1).

In regards to claim 20, Cantwell teaches the limitations of parent claim 19. Cantwell fails to teach sending the frame to a queue after it has been filled. However, it would have been obvious to one skilled in the art at the time the invention was made to modify Cantwell by sending the frames to a queue after converting them in the SAR block 92. The motivation to modify would be to place the frame in the queue so that the SAR block 92 can work on the next frame.

19. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al. (US Patent 6493346 B1) in view of Hosein (US Patent 6735191 B1).

In regards to claim 28 Cantwell teaches all the limitations of parent claims 24 and 25 as stated above. Cantwell fails to particularly teach filling the frame with a plurality of units of voice data, from said time division multiplex system. Hosein teaches the above-mentioned limitation. Figure 1 in Hosein shows a plurality of TDM units 100 that combine multiple voice traffic channels such as 24 DSO channels into a single T1 circuit (see column 3, lines 56-58).

Therefore it would have been obvious to one skilled in the art at the time the invention was made to combine the ATM to TDM conversion disclosed by Cantwell with

using the TDM units used to frame data as disclosed by Hosein. The motivation to combine would be to use multiple TDM units to combine various voice channels and frame the data for transport.

Conclusion

20. Claims 4-5, 17 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay P. Patel whose telephone number is (571) 272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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